

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

SHENZHEN APALTEK CO., LTD.,
Petitioner,

v.

ASETEK DANMARK A/S,
Patent Owner.

IPR2022-01316¹
Patent 8,240,362 B2

Before WILLIAM V. SAINDON, KEVIN W. CHERRY, and
JASON W. MELVIN, *Administrative Patent Judges*.

CHERRY, *Administrative Patent Judge*.

JUDGMENT
Final Written Decision
Determining All Challenged Claims Unpatentable
35 U.S.C. § 318(a)

¹ Cooler Master Co., Ltd., which filed a petition in IPR2023-00667, has been joined as a party to this proceeding.

I. INTRODUCTION

ShenZhen Apaltek Co., Ltd. (“Petitioner”) filed a petition to institute *inter partes* review of claims 1 and 3–19 of U.S. Patent No. 8,240,362 B2 (Ex. 1001, “the ’362 patent”). Paper 1 (“Pet.”). Asetek Danmark A/S (“Patent Owner”) filed a Preliminary Response. Paper 5 (“Prelim. Resp.”). Petitioner filed a Reply to the Patent Owner Preliminary Response on the limited issue of whether we should exercise our discretion under 35 U.S.C. § 325(d) to deny the Petition. Paper 6 (“Pet. Reply”). Pursuant to 35 U.S.C. § 314 and 37 C.F.R. § 42.4(a), we instituted review. Paper 7. No party filed a paper after institution.

We have jurisdiction under 35 U.S.C. § 6. This is a Final Written Decision under 35 U.S.C. § 318(a) as to the patentability of claims 1 and 3–19 of the ’362 patent. We hold that Petitioner has demonstrated by a preponderance of the evidence that the challenged claims are unpatentable.

II. BACKGROUND

A. Related Matters

The parties identify the following district-court proceedings as related matters involving the ’362 patent: *Asetek Danmark A/S v. Shenzhen Apaltek Co.*, Case No. 6:21-cv-00501 (W.D. Tex.) (transferred to N. D. Cal., May 6, 2022); *Asetek Danmark A/S v. CoolIT Systems, Inc.*, Case No. 3:19-cv-00410-EMC (N.D. Cal.) (served on February 7, 2019, currently pending); *Asetek Danmark A/S v. Corsair Gaming, Inc. et al.*, Case No. 3:20-cv-06541-EMC (N.D. Cal.); and *Cooler Master Co., Ltd. et al v. Asetek Danmark A/S*, Case No. 5:21-cv-04627-EJD (N.D. Cal.). Pet. 88; Paper 4, 1 (Patent Owner’s Mandatory Notices).

Patent Owner additionally identifies the following district-court proceedings as related matters involving the '362 patent: *Asetek Holdings, Inc. v. CoolIT Systems, Inc.*, C.A. No. 3:12-cv-04498 (N.D. Cal.) (terminated February 9, 2015); *Asetek Danmark A/S v. CMI USA, Inc.*, C.A. No. 4:13-cv-00457 (N.D. Cal.) (terminated June 1, 2015); *Asia Vital Components Co., Ltd. v. Asetek Danmark A/S*, C.A. No. 1:14-cv-01293 (E.D. Va.) (terminated December 13, 2016); *Asetek Danmark A/S v. Newegg Inc.*, C.A. No. 4:16-cv-07068 (N.D. Cal.) (terminated October 23, 2017); *Asia Vital Components Co., Ltd. v. Asetek Danmark A/S*, C.A. No. 4:16-cv-07160 (N.D. Cal.) (terminated April 17, 2019). Paper 4, 1.

The Petitioner also identifies the following pending petitions for *inter partes* review involving patents that are related to the '362 patent: IPR2020-00522 (U.S. Patent No. 10,078,355 B2); IPR2020-00523 (U.S. Patent No. 10,078,354 B2); IPR2020-00524 (U.S. Patent No. 9,733,681 B2); IPR2021-01195 (U.S. Patent No. 10,613,601 B2); IPR2021-01196 (U.S. Patent No. 10,599,196 B2). Pet. 88.

We also note that IPR2020-00522 and IPR2020-00523 are currently on appeal to the U.S. Court of Appeals for the Federal Circuit as *Asetek Danmark A/S v. Vidal*, Case Nos. 22-1049, 22-1050.

B. Real Parties in Interest

Petitioner identifies its real party in interest as ShenZhen Apaltek Co., Ltd. Pet. 88. In IPR2023-00667, Petitioner identifies Cooler Master Co., Ltd. as the real party-in-interest. IPR2023-00667, Pet. 1, 85.

Patent Owner identifies Asetek Danmark A/S, Asetek USA, Inc., Asetek A/S, and Asetek Holdings, Inc. as its real party in interest. Paper 4, 1.

C. Overview of the '362 patent

The '362 patent is titled “Cooling System for a Computer System.” Ex. 1001, Code (54). The '362 patent issued from Application Serial No. 12/826,768, filed June 30, 2010. *Id.* at Codes (21), (22). The '768 application is a division of Application Serial No. 10/578,578, filed on May 5, 2006, which is a U.S. national phase application of PCT/DK2004/000775, filed November 8, 2004, which claims priority to provisional application 60/517,924, filed November 7, 2003. *Id.* at Code (60), (62); 1:4–8. The '578 application issued as U.S. Patent No. 7,971,632 (“the '632 patent”). *Id.* at Code (62).

The '362 patent relates to a liquid-cooling system for a computer system. *Id.* at Code (57). The specification explains, at the time of the invention, air cooling arrangements were the most-used cooling system for cooling central processing units (CPUs) in computer systems. *Id.* at 1:17–33. An alternative design known at the time of the invention was to use a cooling liquid circulating inside a closed system by means of a pumping unit with a heat exchanger past which the cooling liquid circulates. *Id.* at 1:34–38. The specification contends that liquid cooling is generally more efficient and quieter than air cooling, but that a liquid cooling design consists of “many components,” which increases the total installation time, size, and risk of leakage of the cooling liquid from the system. *Id.* at 1:39–49. Thus, it is one object of the invention to provide a small and compact liquid-cooling solution, which is more efficient than existing air-cooling arrangements and which can be produced at low cost enabling high production volumes, be easy-to-use and implement, can be used with

existing CPU types and computer systems, and requires a low level of maintenance or no maintenance at all. *Id.* at 1:53–63.

An illustrative embodiment of such a device is depicted in Figures 7 and 8, reproduced below.

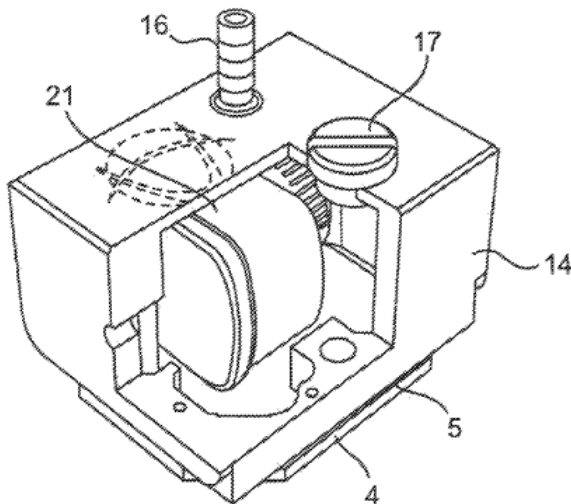


FIG. 7

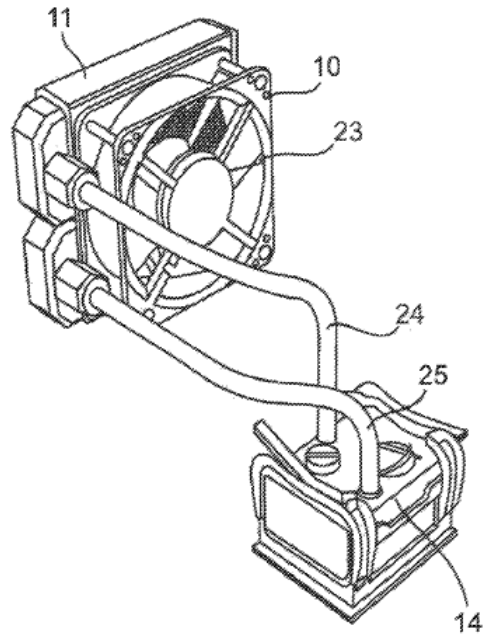


FIG. 8

Figure 8 is a perspective view of the cooling system showing reservoir housing 14 with the heat exchanging surface 4 (shown in Figure 7) and the pump 21 (shown in Figure 7) inside the reservoir. *Id.* at 13:28–30. Figure 8 is a cut-out view into reservoir housing 14, when the reservoir, pump 21, and heat exchanging surface 4 are situated inside the reservoir. *Id.* at 12:62–64. The reservoir has a tube inlet connection (not shown in Figure 7) through which the cooling liquid enters the reservoir. *Id.* at 12:64–66. From the tube inlet connection, the cooling liquid flows through the reservoir passing heat exchanging surface 4 and enters the inlet of the pump. *Id.* at 12:67–13:2. After the cooling liquid flows through the pump, the cooling liquid passes out of the outlet of the pump and further out through tube outlet connection

16. *Id.* at 13:2–4. As shown in Figure 8, tube inlet connection and tube outlet connection 16 are connected to heat radiator 11 by means of connecting tubes 24 and 25. *Id.* at 13:30–34. Cooling liquid flows into and out of the reservoir and the heat radiator through connecting tubes 24 and 25, respectively. *Id.*

Within heat radiator 11 (shown in Figure 8), the cooling liquid passes a number of channels for radiating the heat carried in the cooling fluid from heat exchanging surface 4 (shown in Figure 7). *Id.* at 13:34–38. Air fan 10 (with propeller 23) of Figure 8 blows air past the channels of the heat radiator in order to cool the radiator and thereby cooling the cooling liquid flowing inside the channels through the heat radiator and back into the reservoir. *Id.* at 13:38–41.

The reservoir may be provided with channels or segments for establishing a certain flow-path for the cooling liquid through the reservoir to prevent the cooling liquid passing the reservoir too quickly to take up a sufficient amount of heat from the heat exchanging surface. *Id.* at 13:62–14:10. Figure 9 is reproduced below:

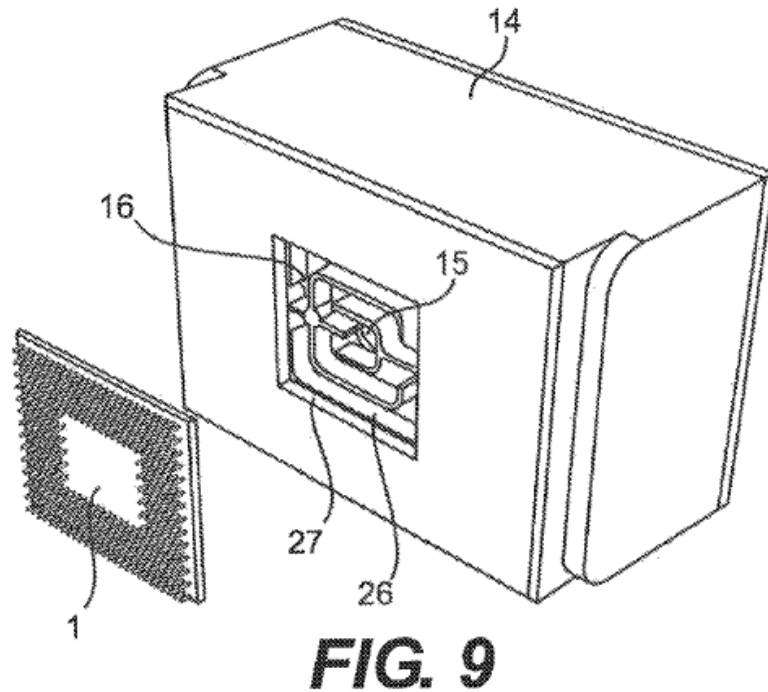


Figure 9 depicts an embodiment of reservoir housing 14 in which channels 26² are provided to direct the flow of cooling liquid from inlet 15 to outlet 16. *Id.* at 15:22–30.

D. The Challenged Claims

Petitioner challenges claims 1 and 3–19 of the '362 patent. Pet. 1. Of the challenged claims, claims 1, 14, and 17 are independent. Claim 1, reproduced below with Petitioner's identifiers for the claim limitations, is illustrative of the subject matter recited in the challenged claims.

[1-PRE] A cooling system for a computer system processing unit, comprising:

² Although the text refers to “channels 25,” that designation appears to be in error and we understand the structure labeled “26” in Figure 9 to depict the described channels. *See* Ex. 1001, 15:22–30.

- [1-a]** an integrated element including a heat exchanging interface, a reservoir, and a pump;
- [1-b]** wherein the reservoir is configured to receive a cooling liquid from outside the reservoir through an inlet and pass the cooling liquid to the outside through an outlet,
- [1-c]** the reservoir including an upper chamber and a lower chamber, the upper chamber and the lower chamber being vertically displaced chambers
- [1-d]** that are separated from each other by at least a horizontal wall and fluidly coupled together by a plurality of substantially circular passages, at least one of the plurality of substantially circular passages being positioned on the horizontal wall,
- [1-e]** a boundary wall of the lower chamber being formed by the heat exchanging interface;
- [1-f]** the heat exchanging interface is adapted to provide separable thermal contact between the processing unit and the cooling liquid such that heat is dissipated from the processing unit to the cooling liquid as the cooling liquid passes through the lower chamber of the reservoir; and
- [1-g]** the pump is adapted to direct the cooling liquid through the upper chamber and the lower chamber of the reservoir, the pump including a motor having a rotor, a stator and an impeller having a plurality of curved blades, the impeller being positioned within the reservoir;
- [1-h]** a heat radiator spaced apart from the integrated element, the heat radiator being fluidly coupled to the outlet and the inlet of the reservoir, the heat radiator being configured to circulate the cooling liquid therethrough and exhaust heat from the cooling liquid; and

[1-i] a fan configured to direct air through the heat radiator, the fan being driven by a motor separate from the motor of the pump.

Id. at 18:50–19:18. Independent claims 14 and 17 recite similar limitations.

Id. at 19:55–20:19, 20:28–56. Claims 8 and 19 indirectly depend from claims 1 and 17, respectively.

E. Evidence

Petitioner submits the following evidence:

Evidence	Exhibit No.
Declaration of Georgios Karamanis, Ph.D.	1003
Batchelder, US 6,019,165 (issued Feb. 1, 2000, filed May 18, 1998) (“Batchelder”)	1006
Shin, Japanese Published Patent Application 2002-151638 A, (published May 24, 2002) (“Shin”) ³	1007
Nakano et al., US 6,915,653 B2 (issued July 12, 2005, filed Apr. 8, 2004) (“Nakano”)	1008

F. Asserted Ground of Unpatentability

Petitioner asserts the following grounds of unpatentability:

Claim(s) Challenged	35 U.S.C. §	Reference(s)
1, 3–11, 13, 17–19	103 ⁴	Batchelder, Shin
12, 14–16	103	Batchelder, Shin, Nakano

Pet. 2.

³ The record includes a certified English translation of Shin. All citations will be to the certified English translation.

⁴ The Leahy-Smith America Invents Act, Pub. L. No. 112-29, 125 Stat. 284 (2011) (“AIA”), amended 35 U.S.C. § 103. The ’362 patent claims benefit of a November 7, 2003, filing date, which is before the effective date of the applicable AIA amendments. Ex. 1001, (60). Petitioner states that it “does not concede that the ’362 patent is entitled to a priority date of November 7, 2003... but assumes that this date applies for purposes of this Petition.” Pet. 5. Thus, we refer to the pre-AIA version of 35 U.S.C. § 103. Our decision would be the same were we to apply the AIA version of the statute.

III. PATENTABILITY ANALYSIS

Petitioner contends that claims 1, 3–11, 13, and 17–19 of the '362 patent are unpatentable under 35 U.S.C. § 103 as obvious over Batchelder in view of Shin, and claims 12 and 14–16 are unpatentable under 35 U.S.C. § 103 as obvious over Batchelder in view of Shin and Nakano. Pet. 2.

A patent claim is unpatentable under 35 U.S.C. § 103(a) if the differences between the claimed subject matter and the prior art are such that the subject matter, as a whole, would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007). The question of obviousness is resolved on the basis of underlying factual determinations including: (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of ordinary skill in the art; and (4) when in evidence, objective evidence of nonobviousness. *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

“In an [*inter partes* review], the petitioner has the burden from the onset to show with particularity why the patent it challenges is unpatentable.” *Harmonic Inc. v. Avid Tech., Inc.*, 815 F.3d 1356, 1363 (Fed. Cir. 2016) (citing 35 U.S.C. § 312(a)(3) (requiring *inter partes* review petitions to identify “with particularity . . . the evidence that supports the grounds for the challenge to each claim”)). This burden of persuasion never shifts to Patent Owner. See *Dynamic Drinkware, LLC v. Nat'l Graphics, Inc.*, 800 F.3d 1375, 1378 (Fed. Cir. 2015) (discussing the burden of proof in *inter partes* review). To prevail in its challenge, Petitioner must demonstrate

by a preponderance of the evidence that the claims are unpatentable.

35 U.S.C. § 316(e); 37 C.F.R. § 42.1(d) (2020).

We organize our patentability analysis into four sections. First, we address the level of ordinary skill in the art. Second, we address claim construction. Third, we provide an overview of the asserted references. And fourth, taking account of the information presented, we consider whether the Petition has shown by a preponderance of the evidence that the challenged claims are unpatentable.

A. Level of Ordinary Skill in the Art

We consider the asserted grounds of unpatentability in view of the understanding of a person of ordinary skill in the art. In assessing the level of ordinary skill in the art, various factors may be considered, including the “type of problems encountered in the art; prior art solutions to those problems; rapidity with which innovations are made; sophistication of the technology; and educational level of active workers in the field.” *In re GPAC Inc.*, 57 F.3d 1573, 1579 (Fed. Cir. 1995) (quoting *Custom Accessories, Inc. v. Jeffrey-Allan Indus., Inc.*, 807 F.2d 955, 962 (Fed. Cir. 1986)). “[O]ne or more factors may predominate.” *Id.*

Relying on the declaration testimony of Dr. Karamanis, Petitioner contends that an ordinarily skilled artisan for the ’362 patent

would have been knowledgeable regarding liquid cooling systems for computer systems, would have earned at least a bachelor’s degree, such as an B.S. (bachelor of science), or equivalent thereof, in electrical or mechanical engineering or a closely-related field, or would have possessed at least two or three years of experience in liquid cooling systems for computer systems or in similar systems.

Pet. 5–6 (citing Ex. 1003 ¶¶ 14–19). Petitioner also contends that a “person with less education but more relevant practical experience, depending on the nature of that experience and degree of exposure to liquid cooling systems for computer systems, could also qualify as a POSITA in the field of the ’362 patent.” *Id.* at 6. Patent Owner did not file a Patent Owner Response, so it does not dispute this level of skill in the art.

We adopt Petitioner’s articulation of the level of ordinary skill in the art, which is consistent with the ’362 patent and the asserted prior art, and we apply it in our obviousness evaluations below. *See Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001) (the prior art, itself, can reflect appropriate level of ordinary skill in art).

B. Claim Construction

Next, we turn to claim construction. In interpreting the claims of the ’362 patent, we “us[e] the same claim construction standard that would be used to construe the claim[s] in a civil action under 35 U.S.C. [§] 282(b).” *See* 37 C.F.R. § 42.100(b) (2020). The claim construction standard includes construing claims in accordance with the ordinary and customary meaning of such claims as would have been understood by one of ordinary skill in the art and the prosecution history pertaining to the patent. *See id.*; *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312–14 (Fed. Cir. 2005) (*en banc*).

Petitioner identifies “reservoir,” “chamber,” “impeller,” and “radiator” as needing construction. Pet. 6–8. Petitioner submits that the other terms do not require construction. Pet. 8.

Having considered the record, we determine that no express claim construction is necessary for any claim terms. *See Nidec Motor Corp. v.*

Zhongshan Broad Ocean Motor Co. Matal, 868 F.3d 1013, 1017 (Fed. Cir. 2017) (holding that only claim terms in controversy need to be construed, and only to the extent necessary to resolve the controversy (citing *Vivid Techs., Inc. v. Am. Sci. & Eng'g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999))).

C. The Prior Art

Before turning to Petitioner's asserted grounds of unpatentability, we provide brief summaries of the asserted references.

1. Batchelder (Ex. 1006)

Batchelder is entitled "Heat Exchange Apparatus." Ex. 1006, (54). Batchelder discloses an "apparatus to transfer heat from a heat source to a heat absorber." *Id.* at (57).

Figure 2, reproduced below, provides an illustration of a heat transfer device.

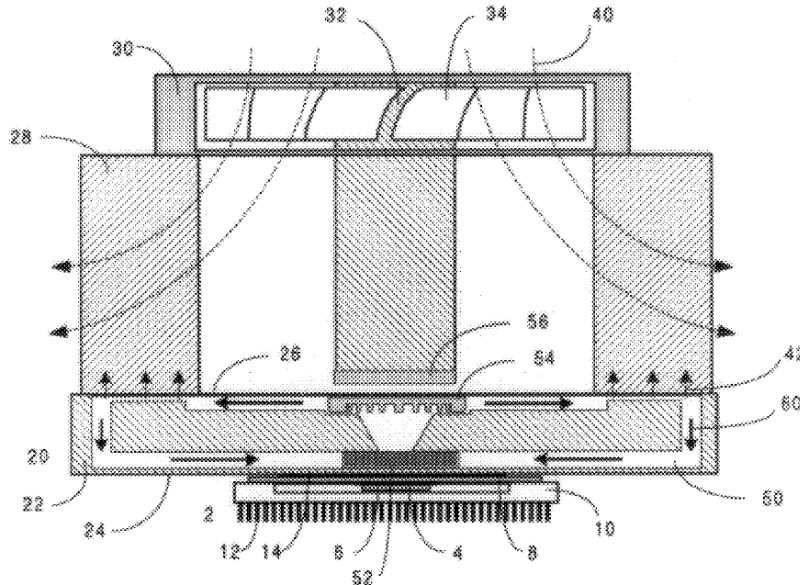
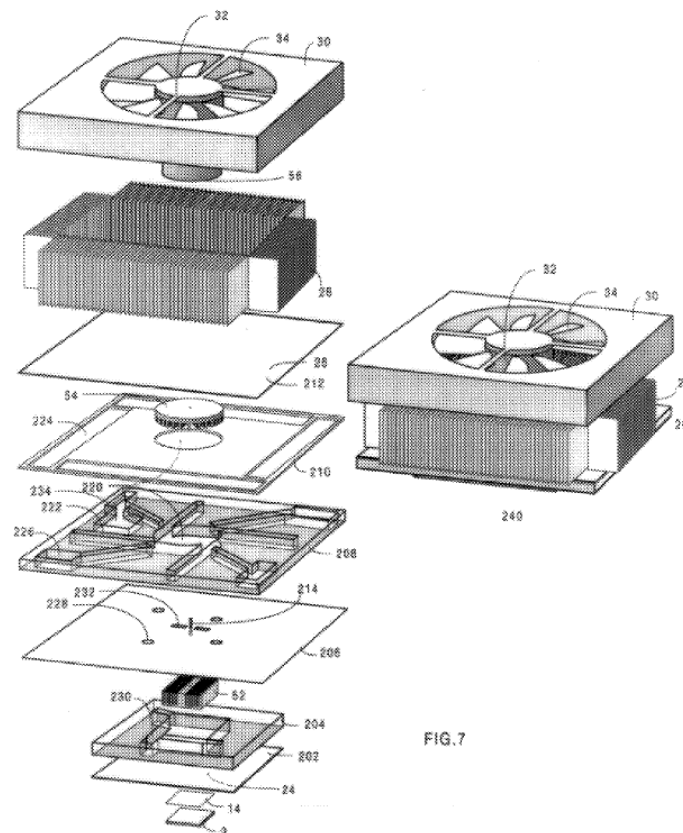


FIG. 2

Ex. 1006, Fig. 2. Figure 2 depicts a heat-transfer device where heat from metal cover 8 of semiconductor chip 4 moves into lower surface 24 of active spreader plate 20, into metallic fin array 52, then into heat-transfer fluid sealed in flow channels 50 inside the active spreader plate 20. Figure 2 also depicts a centripetal or centrifugal pump with impeller 54, immersed in heat-transfer fluid and driven through magnetic coupling to rotor 32, which is outside active spreader plate 20. *Id.* at 4:63–5:26. As indicated by arrows in Figure 2, the heat-transfer fluid flows outward from impeller 54 to the perimeter of active spreader plate 20, down to the bottom surface, in to the center where metallic fin array 52 is located, and then up a passage back to impeller 54. *Id.* at 5:21–32, Fig. 2.

Figure 7, reproduced below, illustrates “an assembly of a heat sink containing an active spreader plate.” *Id.* at 7:23–24.



Ex. 1006, Fig. 7. Figure 7 depicts a heat source 2 “attached to the bottom sheet (202) of the active spreader plate assembly through a compliant insulating layer (14)” where heat transfers from heat source through bottom surface 24 of bottom sheet 202 into fin means 52. *Id.* at 7:24–33. Fin means 52 is attached to the top surface of bottom sheet 202 and is also contained in pocket 230 which is bounded by bottom sheet 202, lower stamped plate 204, and medial sheet 206. *Id.* at 7:33–36. The “[h]eat transfer fluid enters the pocket (230) through four holes (228), passes in contact with the fin means (52), and exits through slots (232).” *Id.* at 7:36–38. Attached to the medial sheet 206 on the top side is an upper stamped plate 208. *Id.* at 7:38–39. “A channel forming sheet (210) is attached to the top of the upper stamped plate (208), and a top sheet (212) seals the top of the channel forming sheet (210).” *Id.* at 7:40–42. Figure 7 also depicts a rotatable impeller 54 “mounted on an axle (214) which is seated in the fin means (52) and which protrudes through the medial sheet (206).” *Id.* at 7:48–51. Batchelder also teaches

Rotation of a permanent magnet (56) motivates the impeller to rotate, thereby impelling the heat transfer fluid sealed inside the active spreader plate rising through slots (232) to flow radially away from the impeller (54) through channels (222) in the upper stamped plate (204), then to flow in the plane of the channel forming sheet (210) and in thermal communication with the fin means (28), to then flow radially towards the impeller through channels (226), where the fluid enters the lower pocket through four holes (228).

Id. at 7:59–8:1.

2. *Shin (Ex. 1007)*

Shin is entitled “Cooling device for electronic equipment.” Ex. 1006, (54). Shin discloses “a cooling structure for liquid cooling of heat

generating electronic circuit components such as LSI chips installed on a wiring board, relating in particular to a cooling structure for compactly mounting a liquid cooled heat sink and pump.” *Id.* ¶ 1. Shin teaches: “Using a DC motor allows the motor speed to be easily changed by changing the DC voltage, thus enabling control of cooling power . . . making the motor into a DC brushless motor makes it possible to implement a pump of low noise and long service life.” *Id.* ¶ 19. Shin also teaches

Besides the heat generating element 1, heat generating elements 22a, 22b, 22c, such as memory LSI and driver LSI chips, which can be cooled by air cooling, as well as an IO card, memory card, hard disk or other card mounting board 23 are also installed on the wiring board 2. The wiring board 2 is housed inside case 24, which is an electronic equipment case. An air cooling fan 34 is installed in the case 24, and the aforementioned multiple air cooled components are air-cooled by cooling air 25.

Id. ¶¶ 23, 24.

3. *Nakano (Ex. 1008)*

Nakano is entitled “Semiconductor Cooling Device.” Ex. 1008, (54). Nakano relates to “a cooling device for cooling a semiconductor element which generates a substantial quantity of heat.” *Id.* at 1:6–8. Nakano also teaches a semiconductor cooling device including

a cold plate 1 for cooling a highly exothermic semiconductor element 5 that tends to emit a substantial amount of heat when in operation, a condenser 2, and an inverter-controlled refrigerant pump 3, all connected in series with each other to define a refrigerating cycle. A refrigerant is filled in this refrigerating cycle. The condenser 2 is adapted to be cooled by a fan 4.

Id. at 2:38–45.

D. Alleged Ground of Unpatentability Over Batchelder and Shin

Petitioner contends that claims 1, 3–11, 13, and 17–19 of the ’362 patent are unpatentable under 35 U.S.C. § 103(a) as obvious over Batchelder

in view of Shin. Pet. 24–75. Having considered the arguments and evidence before us, we determine that the record establishes unpatentability of claims 1, 3–11, 13, and 17–19.

Petitioner maps the language of independent claim 1 to Batchelder’s and Shin’s disclosures.

Petitioner notes that Batchelder discloses or teaches that “[t]he primary objective of this invention is to provide a low cost high reliability heat exchange apparatus that incorporates a composite substrate containing flow channels and a heat transfer fluid, providing low thermal resistance cooling to high density sources.” Pet. 25 (citing Ex. 1006, 2:40–45). And Shin similarly discloses or teaches that “[t]he heat generating element 1, such as an LSI chip, is installed on a wiring board 2, which is a motherboard” in a computer system. *Id.* (citing Ex. 1007 ¶ 24). Petitioner identifies Batchelder’s heat sink assembly as meeting limitation [1a]. *Id.* at 25–31 (citing Ex. 1006, 1:65, 3:49–51, 5:26–28, 7:23–26, 7:46–55, 8:4–12, 8:14–67, Figs. 2, 7; Ex. 1003 ¶¶ 40, 41). Petitioner argues that the combination of Batchelder and Shin accounts for limitations [1b], [1h], and [1i]. Pet. 31–42 (citing Ex. 1007 ¶¶ 23, 25–27, Figs. 1, 3; Ex. 1003 ¶¶ 43–46; Ex. 1006, Fig. 2), 57. Petitioner contends that a person of ordinary skill in the art “would have been motivated to combine Shin with Batchelder to further increase heat management efficiency by using an external radiator that cools the heated cooling liquid after ‘snaking through the inside of the heat exchanger as shown by 28 and 29,’” because this “technique allows heat to more efficiently escape the system.” *Id.* at 36 (citing Ex. 1007 ¶ 25; Ex. 1003 ¶¶ 47–52). Petitioner argues that Batchelder accounts for limitations [1c], [1d], [1e], [1f], and [1g]. *See* Pet. 43–56 (citing Ex. 1006,

3:20–23, 4:53–55, 5:11–13, 5:26–32, 6:5–7, 6:5–18, 8:14–27, 8:36–47, 9:22–10:53, Figs. 2, 7, 8, 9, 10; Ex. 1003 ¶¶ 59–73).

Patent Owner did not file a Patent Owner Response, so it does not offer arguments on this ground. Accordingly, Patent Owner has waived any argument regarding these contentions. *See* Paper 8, 9 (“Patent Owner is cautioned that any arguments not raised in the response may be deemed waived.”). We have reviewed Petitioner’s contentions regarding claim 1, which Patent Owner does not contest, and adopt them as our own. Based on those contentions and evidence, we determine that Petitioner has shown by a preponderance of the evidence that claim 1 is unpatentable as obvious over Batchelder and Shin. We reach the same conclusion regarding Petitioner’s assertions for claims 3–11, 13, and 16, which depend from claim 1. *See* Pet. 57–71. Independent claim 17 is a method claim that recites similar limitations as independent claim 1. *See id.* at 71–73. Claims 18 and 19 depend from claim 17, and recite limitations similar to claims 5 and 8. We have reviewed Petitioner’s unopposed contentions regarding claims 17–19, and adopt them as our own. Thus, we also conclude that Petitioner has shown by a preponderance of the evidence that claims 17–19 are unpatentable as obvious over Batchelder and Shin.

E. Alleged Ground of Unpatentability Over Batchelder and Shin

Petitioner contends that claims 12 and 14–16 of the ’362 patent are unpatentable under 35 U.S.C. § 103 as obvious over Batchelder, Shin, Nakano. Pet. 75–86. Patent Owner did not file a Patent Owner Response, so it does not offer arguments on this ground. Accordingly, Patent Owner has waived any argument directed to those contentions. *See* Paper 8, 9 (“Patent Owner is cautioned that any arguments not raised in the response

may be deemed waived.”). We reviewed Petitioner’s evidence and argument and adopt it as our own. For the reasons provided therein, Petitioner demonstrates that the combination of Batchelder, Shin, and Nakano accounts for the limitations of claims 12 and 14–16, that a person of ordinary skill in the art would have been motivated to combine the references in the manner proposed, and would have had a reasonable expectation of success in doing so. Accordingly, we find that Petitioner has shown by a preponderance of the evidence that claims 12 and 14–16 would have been obvious over the combination of Batchelder, Shin, and Nakano. *See* Pet. 75–86.

IV. CONCLUSION⁵

We conclude Petitioner has shown the challenged claims are unpatentable. In summary:

Claim(s)	35 U.S.C. §	Reference(s)/Basis	Claims Shown Unpatentable	Claims Not shown Unpatentable
1, 3–11, 13, 17–19	103	Batchelder, Shin	1, 3–11, 13, 17–19	
12, 14–16	103	Batchelder, Shin,	12, 14–16	

⁵ Should Patent Owner wish to pursue amendment of the challenged claims in a reissue or reexamination proceeding subsequent to the issuance of this decision, we draw Patent Owner’s attention to the April 2019 *Notice Regarding Options for Amendments by Patent Owner Through Reissue or Reexamination During a Pending AIA Trial Proceeding*. *See* 84 Fed. Reg. 16,654 (Apr. 22, 2019). If Patent Owner chooses to file a reissue application or a request for reexamination of the challenged patent, we remind Patent Owner of its continuing obligation to notify the Board of any such related matters in updated mandatory notices. *See* 37 C.F.R. § 42.8(a)(3), (b)(2).

		Nakano		
Overall Outcome			1, 3–19	

V. ORDER

Accordingly, it is

ORDERED that Petitioner has shown by a preponderance of the evidence that claims 1 and 3–19 of the '362 patent are unpatentable; and

FURTHER ORDERED that, because this is a Final Written Decision, parties to the proceeding seeking judicial review of the decision must comply with the notice and service requirements of 37 C.F.R. § 90.2.

IPR2022-01316
Patent 8,240,362 B2

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